

Funding Research: The Role of the Private sector

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Outline

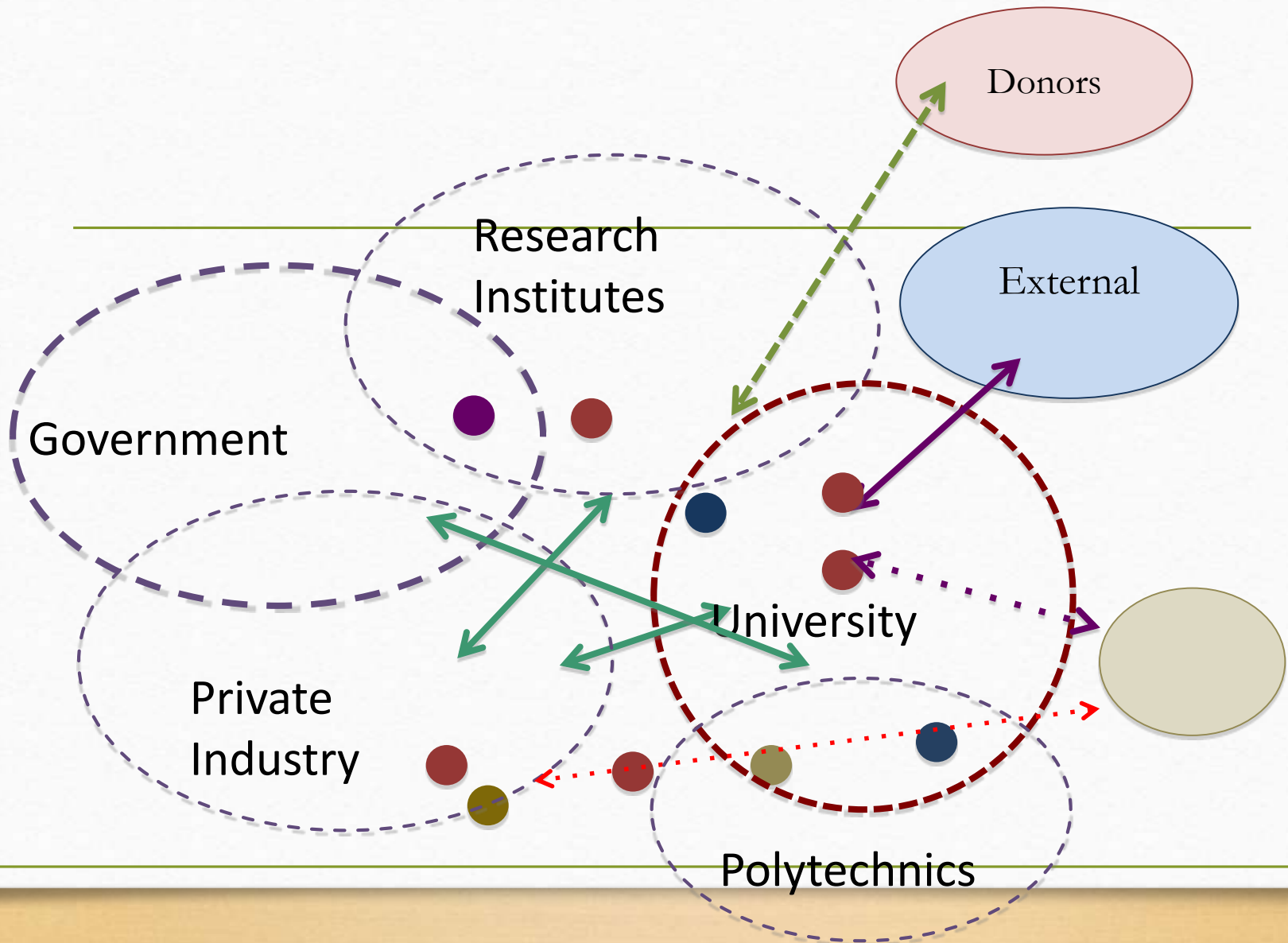
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- National Innovation Systems (NIS)
- Funding for Research
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- What role should our private sector play in funding R&D?
- Challenges
- Conclusion

Introduction

- In every country, the growth of the economy depends on research and innovation.
- Research may be carried out in **search for truth and knowledge** if we are to **get out of our old ways of thinking and doing things**.
- Research may also be carried out to **improve current technologies** used by an organisation or **develop innovations that strengthen the organization's position** in the marketplace.

- We know that Investments in R&D contribute to increases in national income and it is estimated that a 1 percentage point increase in the ratio of R&D expenditure to GNP increases the growth rate of GDP by 0.78 per cent (Chen and Dahlman, 2004).
- Economists such as Milton Friedman and others have suggested that approximately 50% of the USA's annual GDP growth is directly or indirectly ascribed to increases in innovation and R&D.

NATIONAL INNOVATION SYSTEM (NIS)



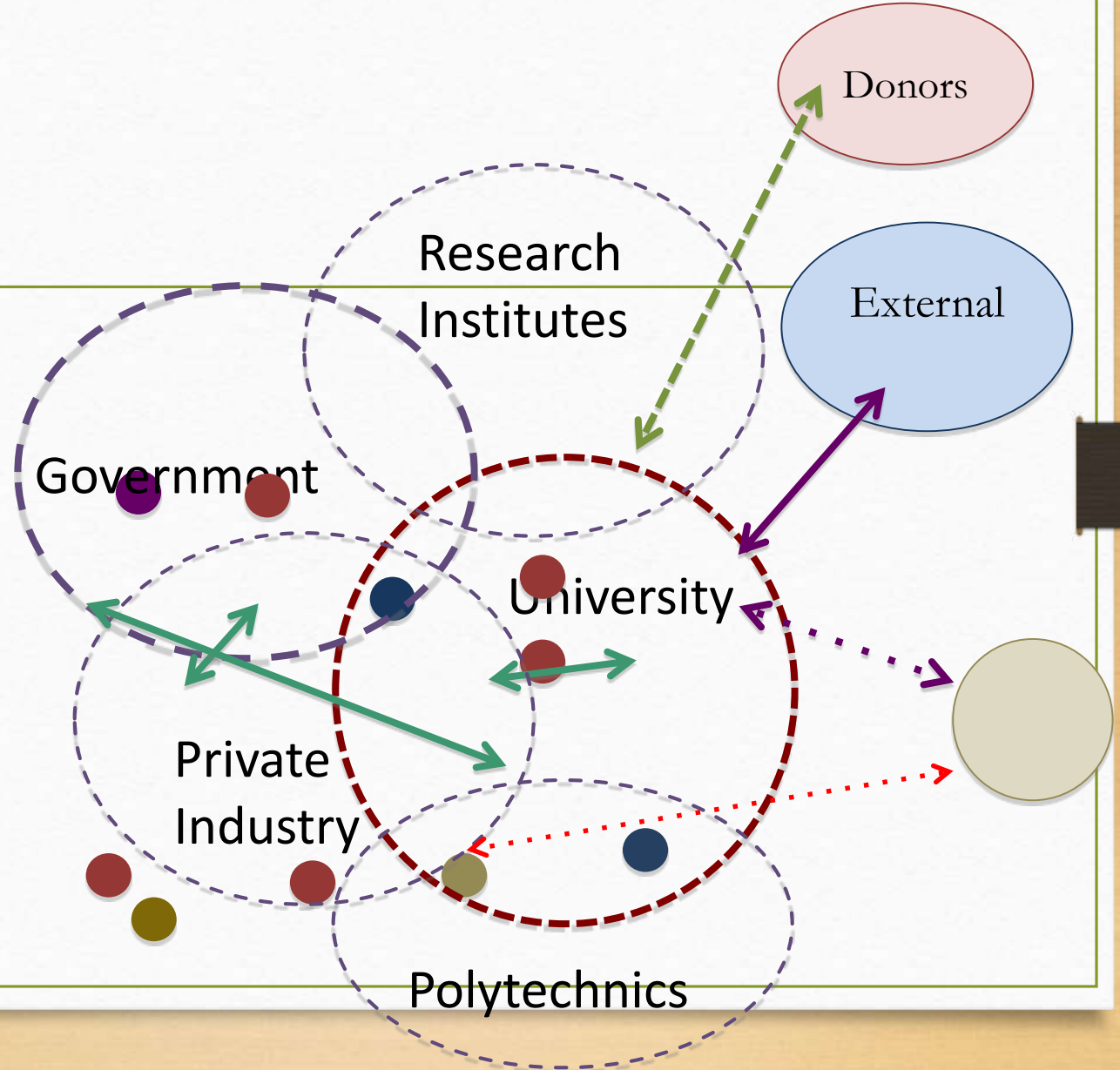
National Innovation System

A national system of innovation can be described as:

- “ .. the network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies.” (Freeman, 1987)

NATIONAL INNOVATION SYSTEM (NIS)

- industry is a critical component of the NIS.
- but it is only one leg of the tripod made up of Govt., industry & HE.
- cultural divide among them
- Weak Linkages between Universities and industry.
- Our economy is not competitive.



Funding for research

- A major issue affecting knowledge production and use of knowledge for development is lack of funding.
- Ghana spends 0.03% of GDP on research and development. Compared to other countries this is relatively low.
- African countries pledged to spend 1% of GDP on research.

Snapshot of R&D Intensity

Gross domestic expenditure on R&D as a percentage of GDP,
2009 or latest available year

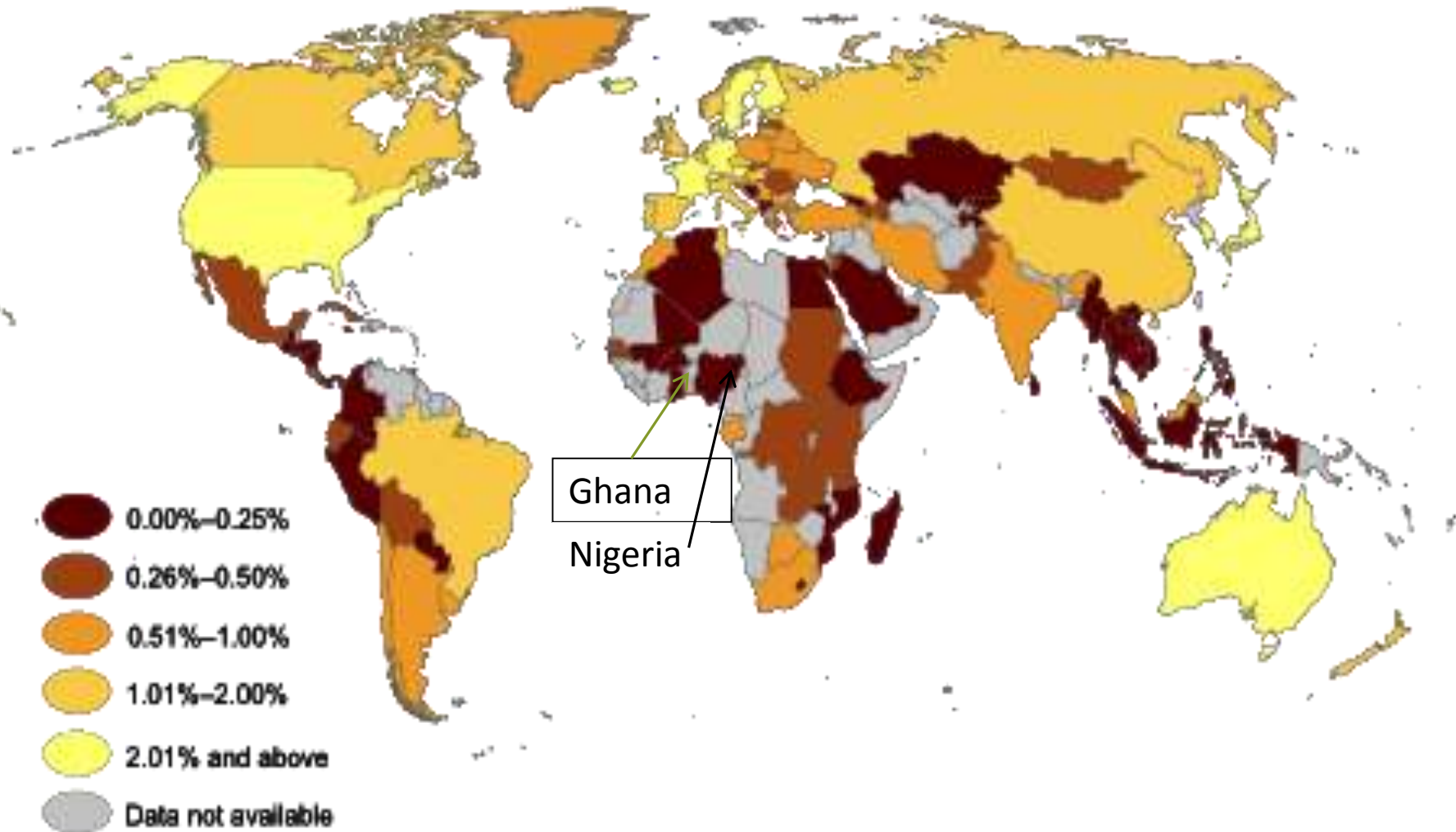
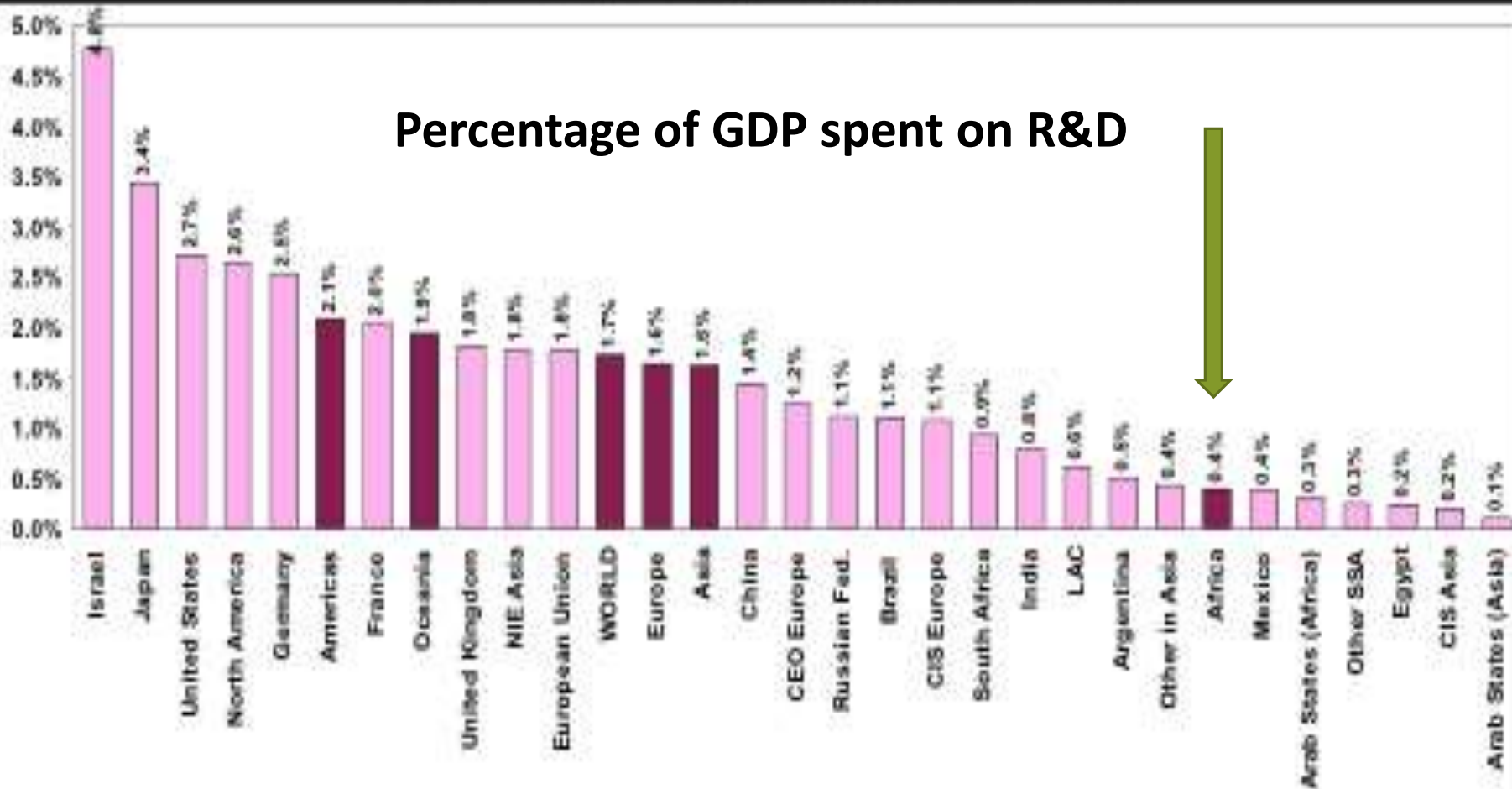


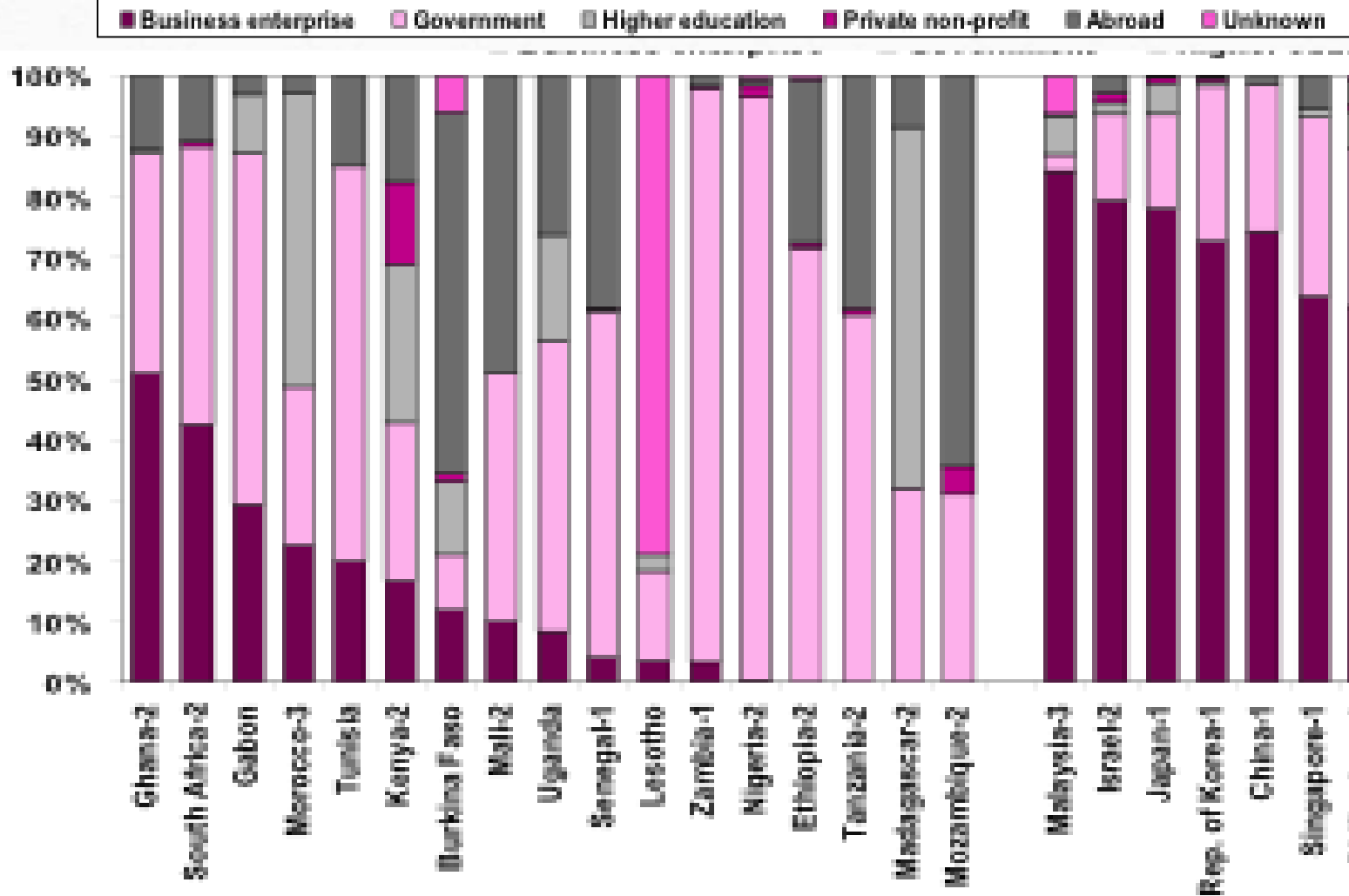
Figure 2. Which regions are most R&D intensive?

Gross domestic expenditure on R&D as a percentage of GDP by principal regions/countries, 2007 or latest year available

Percentage of GDP spent on R&D



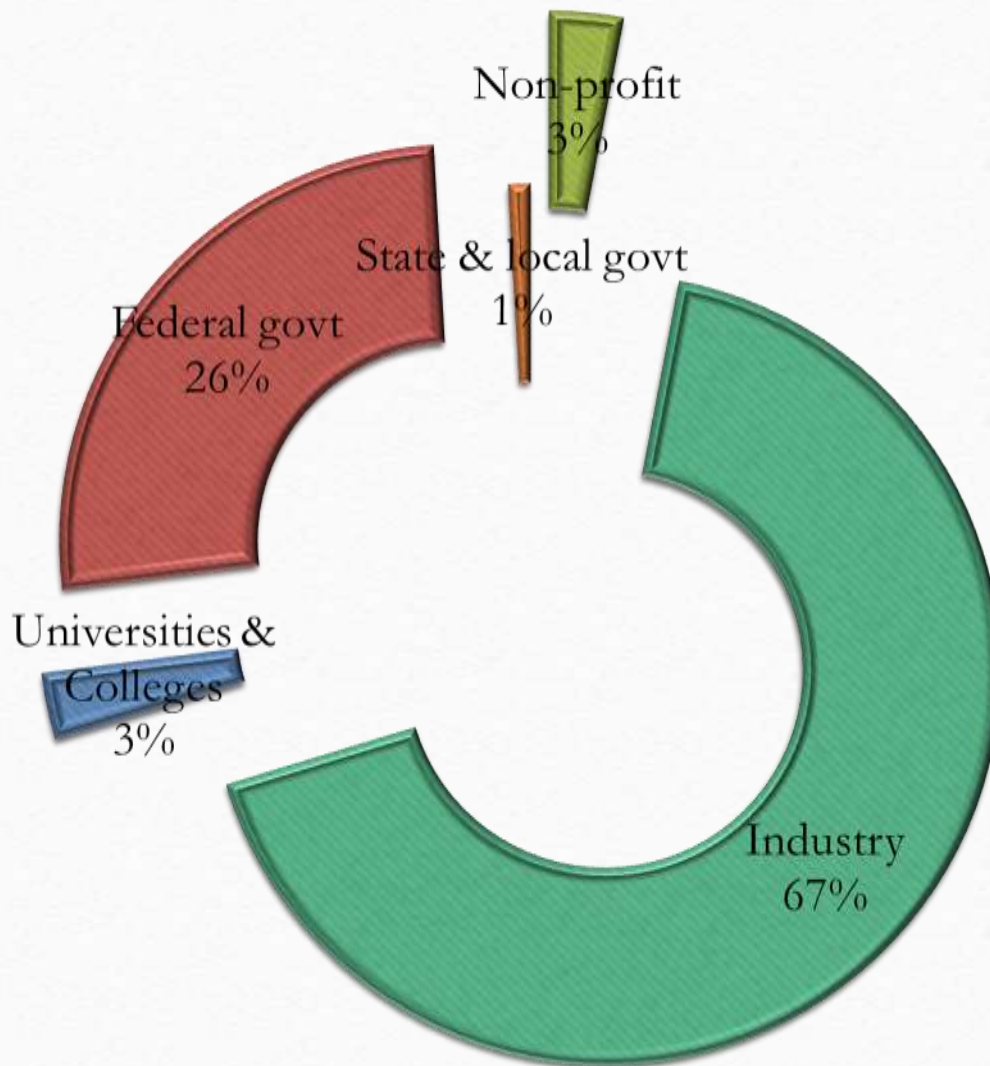
Which Sector Invests the Most?



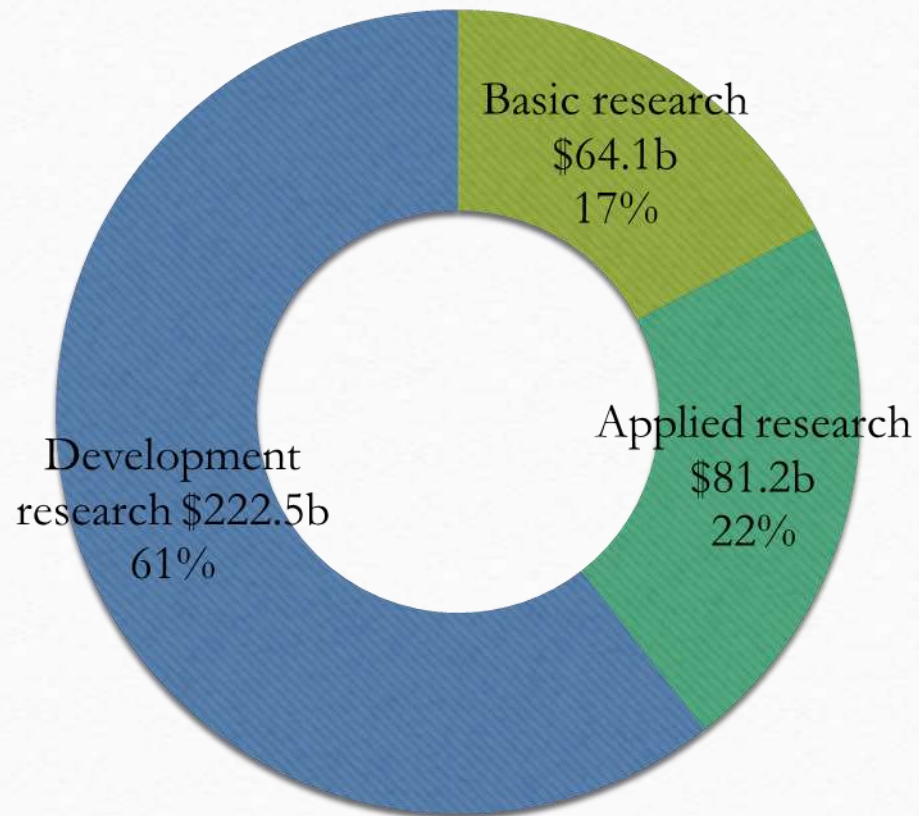
Note: +1 = 2010, -1 = 2008, -2 = 2007, -3 = 2006, -4 = 2005
Source: UNESCO Institute for Statistics, July 2011.

(Which sector invest the most?)

USA R&D Expenditure by Source

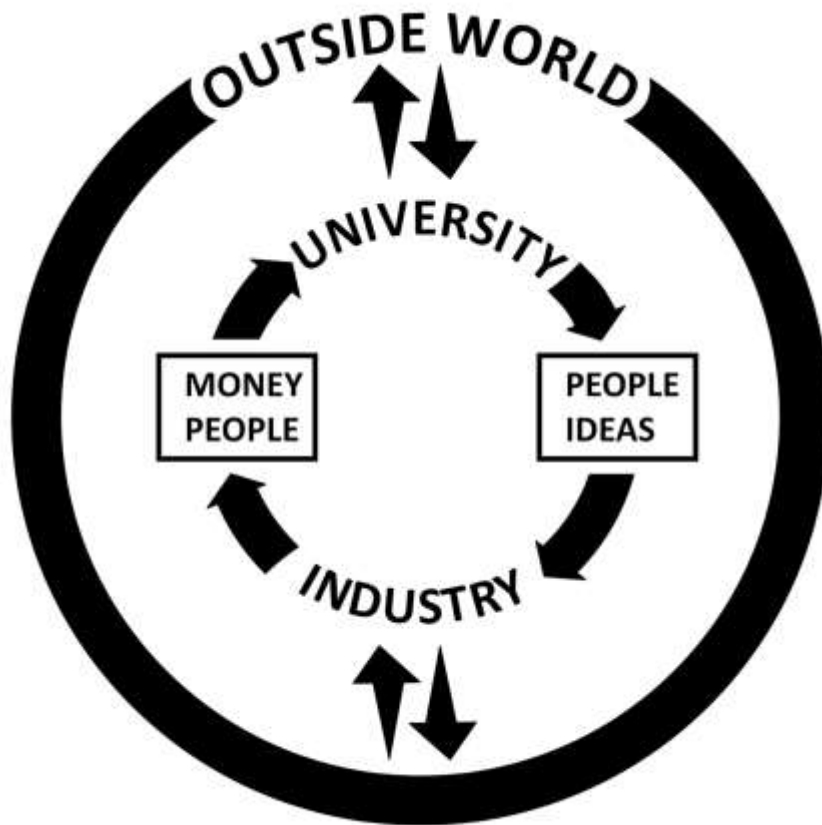


Type of Research



Role of Private industry in research funding

1. Forming strategic partnerships with universities



**Silicon Valley
in USA is a
dramatic
example of the
Role of private
Sector in
research &
Development.**

Examples of strategic partnerships

- **BP's Energy Bioscience Institute at University of California.** This is a multidisciplinary institute creating incentives for new areas of research, creating new courses of study and offering multidisciplinary degree programmes, while also driving innovation.
- **MICROSOFT-CISCO-INTEL- UNIVERSITY OF MELBOURNE partnership** focuses on equipping students with critical 21st century skill sets for a global knowledge economy.
- **Finnish industry** brought together Helsinki School of Economics, the University of Art and Design, the Helsinki University of Technology to create a new field of multidisciplinary study, **International Design Business Management** that blends design, technology and business courses across the three universities to develop students with an innovative mindset through collaborative, cross- disciplinary problem-solving.
- **Audi AG – Technical University of Munich partnership involved the establishment of research institute** that supports over 100 PhD students working on technology and innovation issues vital to Audi's competitiveness. The institute brings professors and students close to Audi's researchers, streams innovative new ideas into the company

Through this partnerships Industry plays a major role in.....

- Providing substantial streams of external funding,
- Modernizing teaching and learning on the cutting edge of a discipline,
- Modernizing curricula,
- Improving the knowledge base and skills of future graduates,
- Fostering economic competitiveness by delivering solutions for pressing national and global challenges,
- Encourage multidisciplinary research,
- Enhancing opportunities for professors and graduates to work on groundbreaking research,
- Helping universities strive for excellence, and
- Establishing centres of excellence in R&D.

What role should our private sector play in Funding R&D?

1. Active interaction between industry and universities

- Identify priority areas for research and innovation that will give the company a competitive advantage.
- Support for student attachment
- Increased collaboration through joint research or contracted research.
- Influence the programs of higher education

Serve as a tool for effective diffusion of knowledge through

- Engagement of young researchers, engineers, etc.
- Engagement of professors as consultants.

2..... Role in Funding R&D

- **Support Research Infrastructure**

Establish in a selected university through strategic partnership a National Science Research Facilities Centre equipped with world class specialized facilities which are normally expensive and therefore beyond the means of any particular institutions, to provide opportunities for Ghanaian researchers to carry out scientific research and development and retain local researchers as well as attract foreign ones.

3....role in Funding R&D

- Support capacity building of young researchers
- To improve the quality of science education at all levels, research in science and technology should include research on teaching and learning science, technology and mathematics.
- Support post-doctoral research for fresh PhD holders
- Set up research chairs in universities to promote research in selected areas.

Set up chairs to improve excellence in research.....

- To increase the number of world-class researchers in Ghana;
- To retain or attract qualified research scientists to the university sector in order to help reverse the decline in research outputs, and capacity;
- To improve the capacity of institutions to generate and apply new knowledge;
- To stimulate strategic research across the knowledge spectrum;
- To create research career pathways for young and mid-career scientists; and
- To improve and accelerate the training of highly qualified personnel through research. (Nicolaidis (2014))

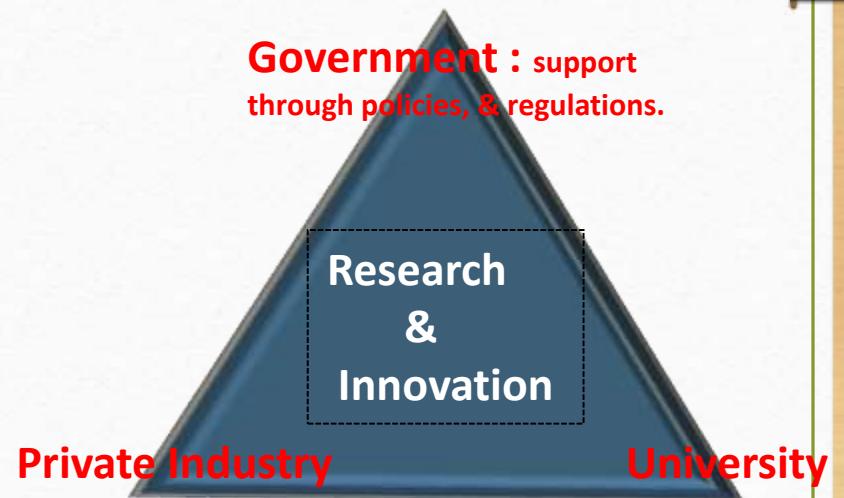
4.....role in Funding R&D

- **Celebrate Achievement**

Institute special awards for best researchers and science teachers. This could be termed the **Industry's Award for Science & Innovation** to be given annually. We need to celebrate achievement and private sector can play a role in this.

Challenges

- The private sector cannot play its role effectively if it is not allowed to grow.
- Government is the third leg of the tripod.
- Government should provide incentive packages – tax relief for industry to influence industry's role in funding & improving their competitiveness.



Conclusion

- Through private sector funding for research and innovation, Ghana can increase the competitiveness of its economy.
- Through this, knowledge can also be transferred into economic practices and into improving societal quality.
- The universities will be better resourced to become research universities.
- Teaching in our schools can be transformed.
- **Wow, It is a Win-Win Situation for All!**

Can Private Sector Funding in Research Propel our Economy to a Higher Ground? YES! YES!



THANK YOU